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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,177	08/01/2003	Kevin Gordon JR.	STE-023.01	4889

25181 7590 03/21/2005

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EXAMINER

KOCH, GEORGE R

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 03/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/633,177

Applicant(s)

GORDON, KEVIN

Examiner

George R. Koch III

Art Unit

1734

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 16-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/17/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Election/Restrictions

1. This application contains claims directed to the following patentably distinct species of the claimed invention:

Species: the parameter affecting welding is altered:

- a. to a value based on that existing difference such that an equalization of the set curve and actual curve occurs during further welding.
- b. such that due to a closed loop control the actual curve converges towards the set curve during further welding

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claims are generic.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over

the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

2. Newly submitted claims 16-30 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: As shown above, they are a different species than the claims previously presented

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 16-30 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Information Disclosure Statement

3. The information disclosure statement filed 2/17/2005 partially fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance in the English language, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of some of the patents listed that are not in the English language. The search report which applicant intends to serve as the explanation is in German, and the relevance of the references is unclear. These references have been crossed out. (One reference, EP 0421018 B1, includes an English translation of the claims which fulfils the explanation).

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peter (US Patent 4,631,685) in view of Grewell '706 (US Patent 5,855,706) and Sundberg (US Patent 4,818,313).

Peter discloses a method for ultrasonic welding of parts by means of an ultrasonic welding device comprising at least a generator (supply 62 and interface 66), a converter (head 46), and a sonotrode (horn 48), based on a set curve of a time dependent welding parameter appropriate to a welding connection meeting set requirements (for example, as shown in Figure 5), and where the welding duration corresponding to the set curve runs between a starting time t_0 to an end time t_e (in Peter, this is referred to as time t_4). Peter also discloses comparing actual data with the set curve (see columns 3 and 4), but does not disclose comparing an actual curve, and does not disclose, depending on the existing difference between the set curve and the actual curve, of at least one welding process parameter affecting welding being altered to a value based on that existing difference such that an equalization of the set curve and the actual curve occurs during further welding.

However, one in the art would appreciate that curves and data points are interchangeable in a control environment, especially one that uses a PC as in applicant's specification. Since a PC (see applicant's Figure 6) cannot literally compare

Art Unit: 1734

curves, and merely stores data points and processing operations that represent a curve, the language of comparing "curves" is being interpreted as meaning comparing data points representing curves. Therefore, Peter, which discloses monitoring data parameters to set data parameters which is, since data points represent curves, also an actual curve comparison with set curve. Therefore, Peter is being interpreted as disclosing actual curves being compared with set curves. Furthermore, Sundberg shows that such curve comparison, via hardware control designs, i.e., circuits, are known in the art (see, for example, Figures 4 and especially Figure 5). Sundberg discloses that the differences between set curves and actual curves is often the result of heat losses (column 4, lines 1-16), and that compensating for these heat losses (i.e., approaching the ideal curve) would achieve a good sealing result. Sundberg further suggests utilizing a regulating method for ensure a proper supply of energy in order to achieve a good sealing result (see abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilize a curve comparison system as modeled by Sundberg in the apparatus of Peter in order to ensure proper energy supply to the weld pieces in order to achieve a good weld result.

Furthermore, with regard to alteration of welding process parameters, Grewell '706 discloses depending on the existing difference, of at least one welding process parameter affecting welding being altered such that an equalization of the set parameters and the actual parameters occurs during further welding (see column 9, lines 21-65 which disclose control signals for triggering welding changes, *and especially line 55, disclosing a control parameter of mechanical dimension being sensed by an optical*

Art Unit: 1734

sensor). Grewell '706 discloses that changing the parameters results in a process that produces welds more easily and repeatably, which gives a wider degree of process tolerances, which reduced the overall weld cycle time and produces stronger welds (column 9, lines 42-47). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized such process adjustments in order to reduce weld cycle time and produce stronger welds.

As to claim 2, 3 and 4, Sundberg as incorporated compares and compensates the actual curve with the set curve for all times between the start and finish. As a result of this, Sundberg compares for identical power values and identical energy inputs.

As to claim 5, Peter discloses changing at least one process parameter (see abstract for disclosure of changing the displacement). Furthermore, Sundberg as incorporated discloses adjustment based on actual curves to set curves, via a hardware control system (see Figures 3 and 5, and column 4).

As to claim 6, the result of the incorporation of the hardware control system of Sundberg in claim 1 above is to change the process parameters gradually over time as a result of the measurement, or compensation, for heat loss.

As to claim 7, Sundberg as incorporated discloses that the energy is matched by a regulation process (see abstract).

As to claim 8, Peter and Grewell '706 both make successive measurements (for example, Figure 9 of Grewell '706) which are used as inputs to changing the functioning.

As to claim 9, Peter (columns 3-5) and Grewell '706 (column 9) as incorporated disclose the concept of measuring a parameter at various time-points. Sundberg as incorporated discloses utilizing a regulation process which models a hardware control design to compare a set curve to actual curve comparison (as shown in Figure 5).

As to claim 10, Peter does not suggest measuring the emitter/received power as the time dependent welding parameter. However, Peter does measure energy (which is related to power) against the time (signals 68 and 69). Furthermore, Sundberg discloses that controlling based on the emitted/received power allows for compensation for heat losses (see columns 3-5, especially column 5, lines 4-48, which model in hardware the structures for heat compensation, based on power). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilize a power control system as modeled in hardware by Sundberg in the apparatus of Peter in order to ensure proper energy supply to the weld pieces in order to achieve a good weld result.

As to claim 11, Peter suggests changing the welding displacement. Furthermore, Sundberg as incorporated utilizes the changes resulting from measuring the power as in claim 10 to change the energy supplied to the sealing jaws, i.e., changes the pressure (see column 3, lines 63-68) which also relates to the force acting on the parts and the energy input into the parts welded. Grewell '706 as incorporated suggests varying the motional amplitude (i.e., amplitude of the sonotrode - see columns 1-3) and also discloses varying the frequency (see Figure 6, which shows the frequency being varied). Grewell '706 suggests that variation of the amplitude and frequency results in a

Art Unit: 1734

stronger weld. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the claimed variables in order to achieve a stronger weld.

As to claim 12, Peter modifieds a welding parameter singly (the welding displacement).

As to claim 13, Grewell '706 (see Figure 6) as incorporated in claim 11 above suggest modifying both the frequency and amplitude jointly in order to achieve a stronger weld.

As to claim 14 and 15, Sundberg as incorporated would allow for the welding to be regulated over its full duration, including at least a part of its duration, based on the respective current difference between the set curve and actual curve.

Response to Arguments

6. Applicant's arguments filed 1/06/2005 have been fully considered but they are not persuasive.

7. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that the control method is a closed looped control mechanism) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Art Unit: 1734

8. Furthermore, with respect to Grewell, applicant argues that Grewell does not disclose adjustments based on a welding related parameter. However, Grewell does disclose adjustments based on a welding related parameter. See column 9, line s 48-65, which discloses a number of parameters.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George R. Koch III whose telephone number is (571) 272-1230 (TDD only). If the applicant cannot make a direct TDD-to-TDD call, the applicant can communicate by calling the Federal Relay Service at 1-866-377-8642 and

Art Unit: 1734

giving the operator the above TDD number. The examiner can normally be reached on M-Th 10-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



George R. Koch III
Patent Examiner
Art Unit 1734

GRK
March 16th, 2005



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SUPERVISORY PATENT EXAMINER
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